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On the Concept of “Cultural Age” in L. S. Vygotsky’s Cultural-historical Theory

—For the purpose of a clearer understanding of the concept “ZPD”—

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Vygotsky had already presented the concept “cultural age” of a child before he presented the concept of the zone of proximal development (ZPD). In my view, it is difficult to realize the true implications of the concept “ZPD” without investigating the concept “cultural age” in the child’s cultural development. It is surprising that no one has paid attention to the concept “cultural age” until now. In this short discussion I tried to make clear the true implications of the concept “ZPD” by investigating the concept “cultural age.”

Key words : Zone of proximal development (ZPD), From interpsychological functions to intrapsychological ones, Cultural age, Method of shifts

1. The zone of proximal development

The concept of the zone of proximal development (ZPD) proposed originally by Vygotsky is very attractive for many professionals who would like to make clear the question of the interrelationship between education and development in children. Vygotsky defined the concept “ZPD” as follows:

The zone of proximal development of a child is the difference between his actual developmental level determined by independent problem solving and his potential developmental level determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1935, p. 42).

The concept implies that intellectual abilities of a child should be evaluated not by what he can solve for himself but by what he can solve under the help of a teacher and peers or in collaboration with them. This idea of Vygotsky is undoubtedly important for thinking about the relationship between teaching and intellectual development, because effective teaching should be focused on a child’s potential developmental level. Children are able to learn successfully under the teaching that develops their latent potentiality.

On the other hand, Vygotsky proposes a very important proposition that characterizes the essence of his cultural-historical theory of mental development. That is,

Any function in the child’s cultural development appears on the stage twice, that is, on two planes. First it appears on the social plane, and then it appears on the psychological plane, namely, first it appears

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among people as an interpsychological category, and then it appears inside the child as an intrapsychological category (Vygotsky, 1960, pp. 197–198).

Thus, according to Vygotsky, we can describe the most fundamental law of the child’s cultural development in the following brief formula: “from interpsychological functions to intrapsychological ones.” It is evident that the concept “ZPD” is an embodiment of this formula in the context of the relationship between teaching and intellectual development. The concept “ZPD” has the same framework as the broader theoretical proposition concerning the genetic relationship between interpsychological functions and intrapsychological ones. Of course, adult guidance or collaborate activities with more capable peers, that is, social interactions, are correspondent to interpsychological functions and mental functions developing inside a child are correspondent to intrapsychological functions.

2. Studies emphasizing only interpsychological functions

There are many Vygotskians who are interested in the child’s education and intellectual development. They make an attempt to develop the effective teaching method by applying the idea of “ZPD” to school or preschool education. Such an attempt is very significant for verification of not only the effectiveness of the concept “ZPD” but also the rightness of Vygotsky’s cultural-historical theory. However, we can find a serious problem in such an attempt made by many Vygotskians.

As a rule, most of these Vygotskians have a tendency to place relatively greater importance on adult guidance or collaborate activities with adults (teachers, parents) or more capable peers, that is, on social interactions, interpsychological functions in the process of children’s learning. They tend to focus on the role of social interactions, interpsychological functions as scaffolding of children’s learning, but almost never discuss the actual conditions of intrapsychological functions acquired by children as the result of collaboration with adults or peers (c.f. Hausfather, 1996; Bliss et al., 1996; Meadows, 1998; Wertsch, 1998).

For example, studying the process of reciprocal teaching or collaborate activities in the classroom, Herrenkohl clarifies that children’s learning through questioning, dialogue or reporting depends on the form of collaborate activities and participation. But Herrenkohl does not tell us how children’s intrapsychological functions can develop their structure and quality as a result of reciprocal teaching. Palincsar & Brown, to be sure, pay attention to intrapsychological functions acquired by children in order to analyze the effect of reciprocal teaching, but they are not successful in assessing its true effect, because the method of assessment adopted by them is far from grasping the structural and qualitative change of intrapsychological functions. In fact, they also place relatively greater importance on the analysis of social interactions in the classroom, that is, interpsychological functions (above-mentioned examples are quoted at second hand. c.f. Wertsch, 1998).

Thus, most Vygotskians pay attention only to the first part of the fundamental formula of cultural-historical theory “from interpsychological functions to intrapsychological ones” and emphasize only the aspect of interpsychological functions, that is, only adult guidance or collaborate activities with adults or peers in understanding the concept “ZPD.” However, we should note that Vygotsky never proposes dealing with interpsychological functions separately from the entire formula “from interpsychological functions to intrapsychological ones.” Therefore, we must not isolate the aspect of interpsychological functions from the whole formula and, of course, we must not give it our sole attention in understanding the concept “ZPD.” We must understand the concept “ZPD” by grasping the formula in its totality.

3. The concept “cultural age”

It should be noted that Vygotsky had already presented the concept “cultural age” of a child before he presented the concept “ZPD.” In my view, it is indispensable to investigate the concept “cultural age” in order that we can realize the true implications of the concept “ZPD.” It is surprising that no one has paid attention to the concept “cultural age” until now.

Vygotsky explains the concept “cultural age” in chapter 14 of his work entitled “History of the development of higher mental functions” (published in 1983, written in 1930–1931). According to Vygotsky, in children’s cultural development we can find the cultural age that is not necessarily correspondent to the chronological age and/or the mental age. Vygotsky writes, “We define the stage of cultural development of a child that he has mostly attained as his cultural age” (Vygotsky, 1983, p. 305; in the English version, p. 232).

Even children of the same chronological and mental age may vary in their cultural age. In contrast, children who have the same cultural age may differ in their chronological age and/or mental age. Then, how can we diagnose the cultural age of a child? Analyzing in detail how children can use the cultural means in certain problem-solving situations, Vygotsky found decisive and fundamental differences among their problem-solving ways. In some cases, the problem is solved without using the cultural means and in other cases, by using the appropriate cultural means. In some cases, the problem is solved by applying certain cultural devices and in other cases, by applying different cultural ones. In this way we can compare two types of problem solving, and through this comparison we can take a completely objective scientific criterion for diagnosing a child’s cultural age.

For example, Vygotsky studied the development of arithmetic in children and showed the characteristic of their operations with numbers from the viewpoint of cultural development. Vygotsky assigned children some problems in subtraction in order to find the degree of their mastery in the cultural development of subtraction. One group consisted of children who could solve these problems equally in the usual manner of subtraction, that is, in the manner of subtracting a number in the lower row (subtrahend, a small number) from a number in the upper row (minuend, a large number). It seems that the children of this group have the same developmental level in subtractive operation.

Vygotsky next asked the children of this group to do the same subtraction, but in reverse so that the subtrahend is written above and the minuend below. The modified problems were expected to have a common effect on children’s performances because the same modification was made to all the children. But the study showed that this was not the case. The children who could solve equally the problems given in the usual way showed a variety of performances in the modified problems. Having mastered only a surface and purely external mechanical way, one child persisted in applying it to the modified problems also and as a result, could not solve them at all. Vygotsky describes the state of such a child as follows:

As soon as conditions for carrying out the operation are modified, he is no longer able to perform the subtractive operation and begins to make mistakes and for this reason, the whole operation is disrupted. Sometimes the subtraction is not carried to completion, the principle of subtraction is violated, and the whole decimal system, the whole system of arithmetical operations is disrupted (Vygotsky, 1983, p. 310; in the English version, pp. 236–237).

Not only having mastered the external skill but also having understood the essential structure of subtraction, another child could solve the modified problems correctly in principle. Vygotsky writes,

With another child, the operation is slowed, the number of errors changes, but the solution itself remains absolutely reliable. Namely, he mastered the required structure of subtraction, that is, in cultural development, he not only acquired the external habit with which subtraction is usually done, but he actually developed an adequate method of behavior with respect to the structure of subtraction (Ibid., p. 310; in the English version, p. 237).

Thus, the performances of the children who seemed to stand on the same stage of cultural development in the context of the usual subtraction ranged between the two above-mentioned extreme cases--- where one child could not solve the problems at all and where another child was able to solve them but more slowly--- in the context of the modified subtraction. From this study Vygotsky concluded that they were indeed genetically at different stages of development with respect to cultural arithmetic. That is, they differed in cultural age. Here we can find a way of diagnosis of cultural age, which Vygotsky calls “the method of shifts.”

4. Conclusion

Thus, according to Vygotsky, a diagnostic characteristic of the cultural age of a child consists in being able to solve also modified problems by continuously applying the cultural means that he mastered previously. In order to do this, the child not only must acquire the external skills but also must understand the essential structure of cultural operations. That is, the cultural development implied by the concept of cultural age is that a child firmly understand the essential structure of cultural operations and is able to apply these cultural operations for himself consciously and freely even if situations change.

The cultural operations acquired by a child at first as interpsychological functions do not remain unchanged inside him, but develop profoundly, qualitatively as his intrapsychological functions and then become conscious and voluntary functions. Therefore, we must not pay attention only to the aspect of interpsychological functions, but pay more attention to the aspect of intrapsychological functions and their developmental process, and study the process of their structural, qualitative change. One reason is that, as Vygotsky made clear, we are able to diagnose the cultural age of a child only by grasping the structural, qualitative change of cultural operations inside him, namely, intrapsychological functions. Another reason is that we cannot evaluate correctly the effect of teaching, which consists of collaborate activities in social interactions, that is, interpsychological functions, without grasping the structural, qualitative change of cultural operations inside a child, namely, intrapsychological functions.

Citing Vygotsky's following significant words, I would like to close my short discussion.

I think the primary task of analyzing the pedagogic process in child psychology and education is to elucidate the process of intellectual development that is induced by the teaching-learning process in school (Vygotsky, 1935, p. 132).

References

- Bliss, J., Askew, M., and Macrae, S. 1996 Effective teaching and learning: scaffolding revisited. *Oxford Review of Education*, Vol. 22, No. 1, pp. 37-61.
- Hausfather, S. J. 1996 Vygotsky and schooling: Creating a social context for learning. *Action in Teacher Education*, Vol. 18, No. 2, pp. 1-10.

- Meadows, S. 1998 Children learning to think: learning from others? Vygotskian theory and educational psychology. *Educational and Child Psychology*, Vol. 15, No. 2, pp. 6–13.
- Vygotsky, L. S. 1935 *Cognitive Development in Children in the Process of Instruction*. Moscow, Leningrad, (in Russian).
- Vygotsky, L. S. 1960 History of the development of higher mental functions. *The Development of Higher Mental Functions*, Moscow, pp. 12–231, (in Russian).
- Vygotsky, L. S. 1983 History of the development of higher mental functions. *Collected Works*, Vol. 3, Moscow, pp. 6–328, (in Russian).
- Vygotsky, L. S. 1997 The history of the development of higher mental functions. *The Collected Works of L. S. Vygotsky*, Vol. 4. New York and London: Plenum Press, (English version).
- Wertsch, J. V. 1998 *Mind as Action*. Oxford University Press.

エリ・エス・ヴィゴツキーの文化-歴史的理論における 「文化的年齢」の概念について

—「最近接発達領域」概念の正しい理解のために—

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ヴィゴツキーの「最近接発達領域」の概念は、彼の文化-歴史的理論の基本的命題である「心理間機能から心理内機能へ」という定式を、子どもの教育と知的発達との関係の文脈において具体化したものである。最近接発達領域の概念は、子どもの知的発達を、子どもが独力で解決できることではなく、大人（教師）の指導や仲間との共同活動の下にできることを指標にしてとらえるべきとの主張を含んでいる。ここから、上述の心理間機能から心理内機能へという基本定式のうち、もっぱら前段のみを取り出して、最近接発達領域の概念の理解にあたっても、心理間機能のモメントだけに注目する傾向がもたらされる。その結果、教育と発達との関係をとらえる場合に、大人（教師）の指導や仲間との共同活動というモメントだけが一面的に強調されることになる。

しかし、ヴィゴツキーは心理間機能から心理内機能へという基本定式を、まさにその総体として統一的に提出しているものであり、そこから前段の心理間機能だけを切り離すことは許されない。最近接発達領域の概念を正しく理解するためには、大人（教師）の指導や仲間との共同活動の結果として子どもに獲得される心理内機能の発達を、その質的・構造的変化をとらえることによって明らかにすることが不可欠なのである。そのためのキー概念が「文化的年齢」の概念なのである。

文化的年齢によって表される文化的発達とは、状況が変化しても子どもが独力で引き続き文化的操作を駆使できることであり、それは子どもが文化的操作の本質的構造をしっかりとマスターし、それを新しい事態にも自覚的・随意的に適用できることを意味している。最初は心理間機能として子どもに習得される文化的方法が、しっかりと子どもの心理内機能として発達し、自覚的・随意的なものとして確立されるところにこそ、最近接発達領域概念の提起する文化的発達の本質が存在するのである。

キーワード：最近接発達領域、心理間機能から心理内機能へ、文化的年齢、転位法

(付記)

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